

Title (en)

Method, apparatus and system for GPS time synchronization using cellular signal bursts

Title (de)

Verfahren, Vorrichtung und System zur GPS-Zeitsynchronisierung mittels zellulärer Signalfolgen

Title (fr)

Procédé, appareil et système de synchronisation du temps GPS à l'aide de rafales de signaux de cellulaires

Publication

EP 1855168 A3 20091021 (EN)

Application

EP 07007426 A 20011231

Priority

- EP 01310963 A 20011231
- US 77752101 A 20010205

Abstract (en)

[origin: EP1229409A2] A system, apparatus and corresponding method for time synchronization, using cellular signal bursts, of for example a global positioning system (GPS) receiver. To synchronize a main module, with access to a clock, to the reference time provided by a cellular communication system via a cellular communication signal, the method includes the steps of: a) having a cellular module respond to the cellular communication signal indicating a time-stamp, by providing a trigger pulse derived from the data component of the cellular communication signal, and also by providing information indicating a time-mark relating the trigger pulse to a universal time; b) having the main module, with access to the clock that provides a signal indicating local time, respond to the information indicating the time-mark; c) communicating the trigger pulse to a timing register coupled to the main module, the communicating being performed via a special hardware path that provides the trigger pulse without substantial random delay; d) having the timing register respond to the signal indicating local time, and also respond to the trigger pulse, by holding information indicating, in local time, when the trigger pulse is received by the timing register; and e) having the main module access the timing register and so obtain the time when the trigger arrives, and further having the main module determine the difference between when the information indicating the time-mark arrives and when the trigger arrives. <IMAGE>

IPC 8 full level

G01S 19/23 (2010.01); **G04G 7/02** (2006.01); **G01S 19/03** (2010.01); **G01S 19/05** (2010.01); **G01S 19/25** (2010.01); **G04G 5/00** (2013.01); **G01S 1/00** (2006.01)

CPC (source: EP US)

G01S 19/03 (2013.01 - EP US); **G01S 19/05** (2013.01 - EP US); **G01S 19/23** (2013.01 - EP US); **G01S 19/235** (2013.01 - EP US); **G01S 19/256** (2013.01 - EP US); **G04G 5/002** (2013.01 - US); **G04G 7/02** (2013.01 - US); **G04R 20/02** (2013.01 - EP US); **G04R 20/06** (2013.01 - EP US); **G04R 20/18** (2013.01 - EP US)

Citation (search report)

- [A] US 6150980 A 20001121 - KRASNER NORMAN F [US]
- [A] WO 0036431 A1 20000622 - SNAPTRACK INC [US]

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CN111123692A

Designated contracting state (EPC)

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EP 1229409 A2 20020807; **EP 1229409 A3 20031203**; **EP 1229409 B1 20070530**; **EP 1229409 B8 20070801**; AT E363677 T1 20070615; DE 20122743 U1 20070802; DE 60128648 D1 20070712; DE 60128648 T2 20080124; EP 1855168 A2 20071114; EP 1855168 A3 20091021; EP 1855168 B1 20190626; ES 2286085 T3 20071201; JP 2002318276 A 20021031; JP 3854162 B2 20061206; US 2002107031 A1 20020808; US 2004137916 A1 20040715; US 2006234724 A1 20061019; US 6678510 B2 20040113; US 7085546 B2 20060801; US 9341716 B2 20160517

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